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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/890,563	08/02/2001	Ichiro Amimori	012777-043	4585
21839	7590	07/14/2005	EXAMINER	
BUCHANAN INGERSOLL PC (INCLUDING BURNS, DOANE, SWECKER & MATHIS) POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			HON, SOW FUN	
			ART UNIT	PAPER NUMBER
			1772	

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/890,563

Applicant(s)

AMIMORI ET AL.

Examiner

Sow-Fun Hon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1-4,6-10,12,14-16.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-10,12,14 and 15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Withdrawn Rejections

1. The claim objections in the Office action dated 11/22/04 have been withdrawn due to the cancellation of claims 5, 7 and amendment to claims 1-4, 6 in Applicant's response dated 4/22/05.

New Rejections

Claim Rejections - 35 USC § 112

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 2,16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "being cross-linked" implies an ongoing process step yet to be finished. Clarification or correction is requested.

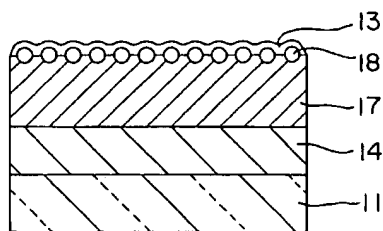
Claim Rejections - 35 USC § 103

4. Claims 1-4, 6, 8-10, 12, 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oka et al. (US 5,909,314).

Regarding claims 1,12,14, Oka teaches an optical film comprising, on a transparent support (substrate film 11), (a) an antiglare hard coat layer 17 (having a hard property), containing a matte material 18, and (b) a low refractive layer 13 (column

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27, lines 34-41), which maintains the concavo-convex structure. See Fig. 18 of Oka on the next page. The refractive index of the low refractive index material is 1.45 or less (not more than) (column 13, lines 24-29). Oka teaches that the optical film (antiglare-antireflection) film has a total transmittance of light of 94 %, which is within the claimed range of 93.5 % or more, and a haze of 5.0 (column 27, lines 29-34), which is within the claimed range of 1.0 % or more.

**FIG. 18**

Oka teaches that hard coat 17 (binder resin used in the antiglare layer) may have a thickness of greater than or equal to (not less than) 0.5 microns, or 3 microns (column 9, lines 54-64). The matte material 18 has a particle size (diameter) in the range of from 1 to 10 microns (column 9, lines 17-27). A hard coat layer with a 0.5 micron layer thickness combined with a 1 micron particle diameter which is hence larger than the thickness of the hard coat layer by 0.5 micron, or a 5 micron layer thickness combined with a 10 micron particle diameter which is hence larger than the thickness of the hard coat layer by 5.0 microns, means that the antiglare layer of Oka encompasses the limitation wherein the particle size is larger than the thickness of the hardcoat (claim 1), and the claimed range of 0.5 to 5.0 microns (claim 12). Oka teaches that the matte material enables the antiglare property to be increased without detriment to the transparency (column 9, lines 17-27). Hence the density of particles, which is the

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number of particles per square meter of the surface area, can be varied to obtain the desired antiglare effect.

Therefore, although Oka fails to teach that the density of the particles is in a range of 100 to 5000 particles/m², or 200 to 2000 particles/m², because Oka teaches that the particles are used as matte material 18 to enable the antiglare property to be increased, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have varied the density of the particles in the antiglare layer of Oka, in order to obtain the claimed range of 100 to 5000 particles/m², or 200 to 2000 particles/m², for the desired antiglare effect.

Regarding claims 2,15, Oka teaches that the low refractive index layer is formed by incorporating therein a polyvinylidene fluoride (column 13, lines 24-32), which is a fluorine-containing macromolecular compound, and a fluorinated compound trifluoroethyl acrylate, into a polyfunctional acrylate cross-linked (cured) by ionization radiation (column 13, lines 34-44). The polyvinylidene fluoride has a coefficient of kinetic friction of 0.2 or less (claim 2), or 0.15 or less (claim 15), as evidenced by Applicant's specification which uses the same material (page 19, lines 1-5).

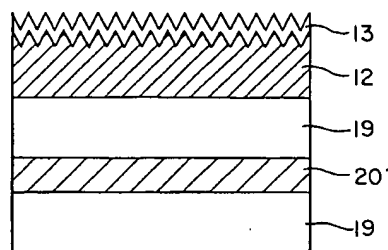
Regarding claim 3, Oka teaches that the hard coat (antiglare) layer contains a cross-linked (thermosetting or ionizing radiation curing) binder polymer (column 10, lines 1-10). The matte particles are transparent (have a high transparency) (column 9, lines 15-20). Figure 18 of Oka, on the previous page, shows that the matte particles are monodisperse, thus having a particle size distribution of 0.2 or less in terms of coefficient of variation.

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Regarding claim 4, Oka teaches that the matte material includes plastic beads (column 9, lines 15-25). Plastic is much softer and easier to scratch relative to the inorganic materials for which the Moh's scale of hardness was developed. Hence the plastic beads have a Moh's hardness scale of less than 7.

Regarding claim 6, Figure 18 of Oka, on the previous page, shows that the matte particles are monodisperse, thus having a particle size distribution of 0.2 or less in terms of coefficient of variation. Oka teaches that the matte particles are transparent (have a high transparency), and include plastic beads (column 9, lines 15-25). Plastic is much softer and easier to scratch relative to the inorganic materials for which the Moh's scale of hardness was developed. Hence the plastic beads have a Moh's hardness scale of less than 7. Oka teaches that the low refractive index layer is formed by incorporating therein a polyvinylidene fluoride (column 13, lines 24-32), which is a fluorine-containing macromolecular compound, and a fluorinated compound trifluoroethyl acrylate into a polyfunctional acrylate cross-linked (cured) by ionization radiation (column 13, lines 34-44). The polyvinylidene fluoride has a coefficient of kinetic friction of 0.2 or less, as evidenced by Applicant's specification which uses the same material (page 19, lines 1-5).

Regarding claim 8, Oka teaches a polarizing plate comprising a polarizing layer 20 and two protective TAC films 19 thereon, wherein the optical (antiglare-antireflection) film, layers 12-13, is laminated on one of the protective films 19 (column 22, lines 30-40). The matted layer is disposed at the opposite side to the polarizing layer 20. See Fig. 19 of Oka below.

**FIG. 19**

Regarding claim 9, Oka teaches a liquid crystal display device using the optical (antiglare-antireflection) film (column 22, lines 45-55).

Regarding claim 10, Oka teaches a liquid crystal display device, comprising two polarizing plates (19/20/19) provided on both sides of a liquid crystal cell 21. The optical (antiglare-antireflection) film is laminated on one of the protective films 19 (column 22, lines 47-57). While Fig. 20 of Oka shows the matted layer disposed toward the front of the display, away from the back light side, Oka teaches that the (antiglare-antireflection) film reduces reflection, but at the same time, markedly increases transmittance (column 8, lines 1-10). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided a matted layer toward the back light side of the display in addition to the front of the display, in order to reduce scattering (reflection) of the back light rays, and to increase transmittance of the back light rays to the front of the display.

Claims 12, 14-15 are discussed above.

Regarding claim 16, Oka teaches that the low refractive index layer is formed by incorporating therein a polyvinylidene fluoride (column 13, lines 24-32), which is a fluorine-containing macromolecular compound, and a fluorinated compound

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trifluoroethyl acrylate, into a polyfunctional acrylate cross-linked (cured) by ionization radiation (column 13, lines 34-44). The polyvinylidene fluoride has a coefficient of kinetic friction of 0.2 or less, as evidenced by Applicant's specification which uses the same material (page 19, lines 1-5). Oka teaches that the hard coat (antiglare) layer contains a cross-linked (thermosetting or ionizing radiation curing) binder polymer (column 10, lines 1-10). The matte particles are transparent (have a high transparency) (column 9, lines 15-20). Figure 18 of Oka, on the previous page, shows that the matte particles are monodisperse, thus having a particle size distribution of 0.2 or less in terms of coefficient of variation.

Response to Arguments

5. Applicant's arguments with respect to claims 1-4, 6, 8-10, 12, 14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (571)272-1498. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Hon

Sow-Fun Hon

07/08/05

Harold Pyon
HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

7/11/05